

## Claims

We Claim:

- 1 1. A method for communicating data between terminals in heterogeneous  
2 communications network, comprising:  
3       broadcasting periodically a first beacon in a first signal format, the first  
4 beacon defining a start of a contention period and a start of a contention free  
5 period, the contention free period for communicating data between the terminals;  
6 and  
7       broadcasting a second beacon in a second signal format during the  
8 contention free period, the second beacon defining the start of the contention  
9 period and the start of the contention free period.
- 1 2. The method of claim 1, in which the contention free period includes assigned  
2 and unassigned slots, and in which the second beacon is broadcast during time  
3 periods of unassigned slots.
- 1 3. The method of claim 1, further comprising:  
2       broadcasting a plurality of second beacons in a plurality of different signal  
3 formats during the contention free period.
- 1 4. The method of claim 1, in which the first signal format is predetermined.
- 1 5. The method of claim 1, in which the first signal format is based on a priority of  
2 terminals in the heterogeneous network.

- 1 6. The method of claim 1, in which the first signal format is based on a bandwidth  
2 of terminals in the heterogeneous network.
- 1 7. The method of claim 2, in which the slots are assigned according to a bandwidth  
2 of terminals in the heterogeneous network.
- 1 8. The method of claim 2, in which the slots are assigned according to a priority of  
2 terminals in the heterogeneous network.
- 1 9. The method of claim 1, in which terminals of the heterogeneous network share a  
2 single frequency band.
- 1 10. A heterogeneous communication network, comprising:  
2 a first terminal communicating according to a first signal format;  
3 a second terminal communicating according to a second signal format;  
4 a coordinator configured to broadcast periodically a first beacon in the first  
5 signal format, the first beacon defining a start of a contention period and a start of a  
6 contention free period, and configured to broadcast a second beacon in the second  
7 signal format during the contention free period, the second beacon defining the  
8 start of the contention period and the start of the contention free period.
- 1 11. The network of claim 10, in which the coordinator can communicate with any  
2 terminal in the network in any predetermined signal format.
- 1 12. The network of claim 10, in which the first and second terminal communicate  
2 indirectly with each other via the coordinator terminals.